

JR

POWERINE REFINERY

Santa Fe Springs, California



Quarterly Groundwater Monitoring and Sampling Report

**ENSR Consulting and Engineering
(Formerly ERT)**

August 1989

Document Number 5500-005-101



QUARTERLY GROUNDWATER MONITORING AND
SAMPLING REPORT FOR THE
POWERINE REFINERY

July 1989

PREPARED FOR

POWERINE OIL COMPANY
P.O. Box 2108
Santa Fe Springs, California 90670

By

ENSR CONSULTING AND ENGINEERING
(Formerly ERT, Inc.)
19782 MacArthur Boulevard, Suite 365
Irvine, California 92715

TABLE OF CONTENTS

	<u>Page</u>
1.0 INTRODUCTION	1
2.0 GROUNDWATER MONITORING AND SAMPLING	4
2.1 Water-Level Monitoring	4
2.2 Groundwater Sampling	7
3.0 LABORATORY ANALYSIS	11
3.1 EPA Test Method 601	11
3.2 EPA Test Method 624	11
4.0 ANALYTICAL RESULTS	13
5.0 CONCLUSIONS	25

LIST OF TABLES

<u>TABLE NUMBER</u>	<u>TITLE</u>	
1	SUMMARY OF WATER-LEVEL MONITORING DATA	6
2	SUMMARY OF GROUNDWATER SAMPLING DATA	9
3	SUMMARY OF ANALYTICAL TEST RESULTS- VOLATILE ORGANIC COMPOUNDS	19
4	SUMMARY OF ANALYTICAL TEST RESULTS- PURGEABLE HALOCARBON COMPOUNDS	24

LIST OF FIGURES

<u>FIGURE NUMBER</u>	<u>TITLE</u>	
1	PROJECT SITE LOCATION MAP	2
2	SITE PLOT PLAN	3
3	GROUNDWATER CONTOUR MAP	5

Table of Contents (continued)

<u>FIGURE NUMBER</u>	<u>TITLE</u>	<u>Page</u>
4	BENZENE CONCENTRATIONS	15
5	ETHYLBENZENE CONCENTRATIONS	16
6	TOLUENE CONCENTRATIONS	17
7	TOTAL XYLENES CONCENTRATIONS	18

APPENDICES

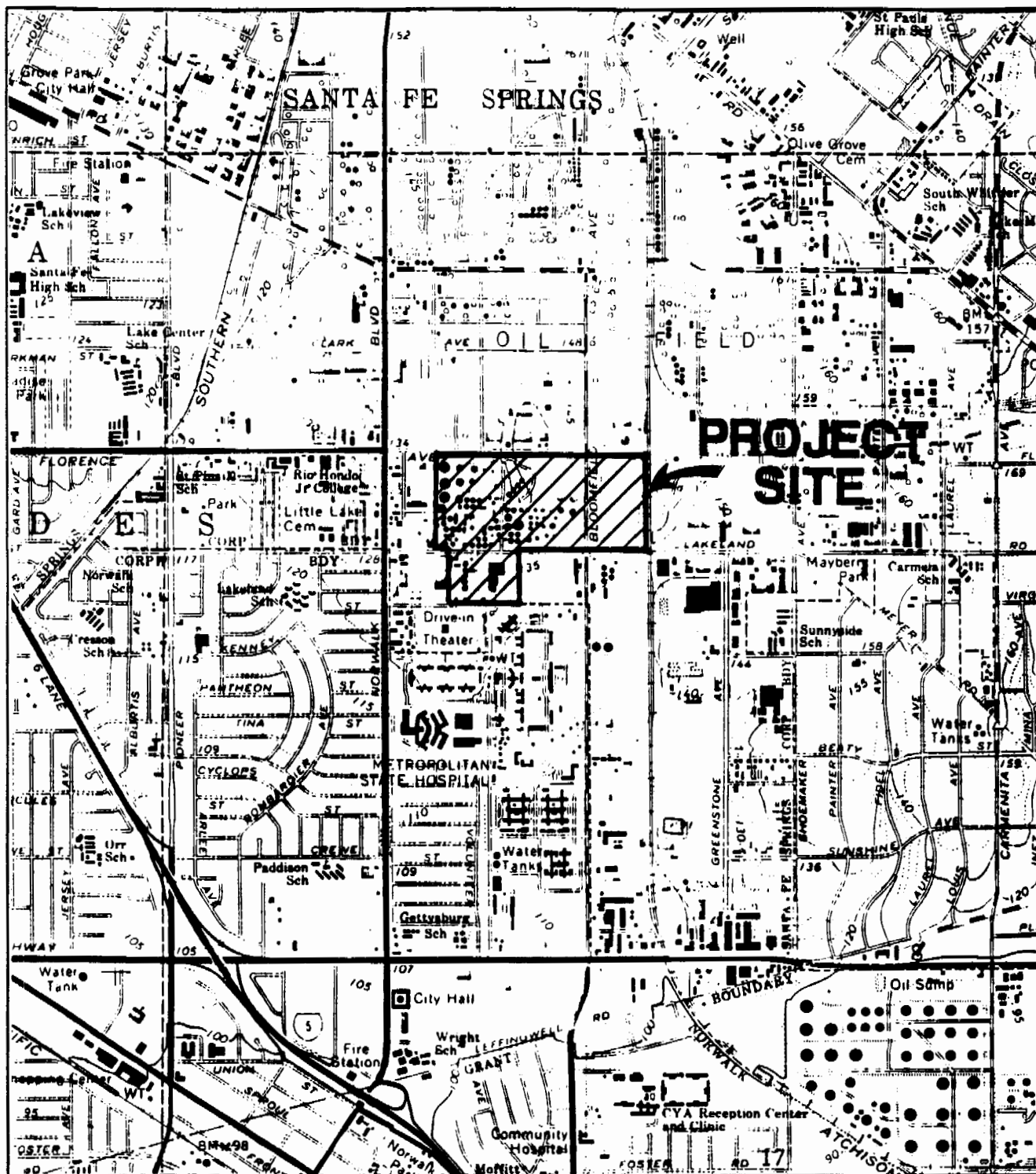
APPENDIX A - CHAIN-OF-CUSTODY DOCUMENTS

APPENDIX B - LABORATORY REPORTS

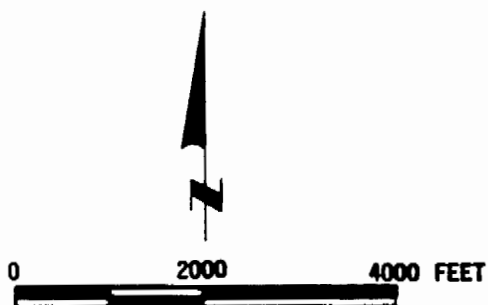


1.0 INTRODUCTION

ENSR Consulting and Engineering (Formerly ERT, Inc.) personnel measured water levels in thirteen (13) monitoring wells on May 31 and June 1, 1989 and collected water samples from eight (8) monitoring wells on June 1, 2, and 5, 1989 at the Powerine Oil Company refinery located at 12354 Lakeland Road, Santa Fe Springs, California (Figures 1 and 2). Groundwater samples were analyzed to evaluate the concentrations of purgeable halocarbon and purgeable volatile organic compounds. This work was performed to comply with the requirements of the Regional Water Quality Control Board, Los Angeles Region (RWQCB) for quarterly monitoring, sampling, and analytical testing of perched groundwater beneath the refinery. This report summarizes the field procedures, laboratory analyses, and analytical results for the second quarter of 1989.



BASE MAP FROM U.S.G.S, 7 1/2 MINUTE SERIES (TOPOGRAPHIC), WHITTIER QUADRANGLE



ENSR

FIGURE 1
PROJECT SITE LOCATION MAP

DRAWN BY:	DATE:	PROJECT NO: 5500-002
CHK'D BY: <i>RD</i>	REVISED:	DWG.NO:

FX-9 Wells

2.0 GROUNDWATER MONITORING AND SAMPLING

2.1 Water-Level Monitoring

Water-level monitoring was performed on May 31 and June 1, 1989 using a Solinst water level meter in wells containing water only, and a stainless steel tape with water gauging paste and gasoline gauging paste in wells containing free product (MW-501, MW-502, MW-504). Monitoring equipment was decontaminated following each measurement. The decontamination procedure consisted of a tap water rinse, a thorough scrubbing using a non-phosphatic detergent in tap water, a second tap water rinse, and a final rinse using distilled water obtained from a State-certified analytical laboratory.

Groundwater monitoring results are summarized in Table 1 and are illustrated on the groundwater contour map in Figure 3. Groundwater elevations ranged from 33.92 feet above MSL in MW-502 to 52.03 feet above MSL in MW-104. The water table gradient slopes generally southwestward across the site.

As in previous quarters, monitoring well MW-202 was observed to be dry. The water level in monitoring well MW-101 was also too low to measure. Monitoring wells MW-501, MW-502, and MW-504 contained .81 feet, 3.13 feet, and 2.20 feet of free product, respectively on the upper surface of the perched aquifer. Therefore, water samples were not extracted from these monitoring wells. The depth to groundwater was not measured in monitoring well MW-102 because the well was reportedly destroyed sometime prior to July, 1987.

FX-9 Wells

TABLE 1
SUMMARY OF WATER-LEVEL MONITORING DATA

MW No.	Date	Elevation Top of Casing (feet,MSL)	Depth to Water (feet)	Water Level Elevations (feet,MSL)	Free Product (feet)
101	5/31/89	134.98	b	b	b
102	5/31/89	134.81	a	a	a
103	5/31/89	136.95	95.92	41.03	ND
104	5/31/89	141.60	89.57	52.03	ND
201	5/31/89	132.91	93.00	39.91	ND
202	5/31/89	137.89	b	b	b
203	5/31/89	143.89	97.50	46.39	ND
204	5/31/89	140.14	97.68	42.46	ND
205	5/31/89	138.17	92.80	45.37	ND
206	5/31/89	129.93	95.55	34.38	ND
501	5/31/89	128.70	94.62	34.08	.81 (.75) ^c
502	5/31/89	131.19	97.27	33.92	3.13 (ND) ^c
503	5/31/89	131.43	95.50	35.93	ND
504	6/1/89	133.83	94.36	39.47	2.20 (2.75) ^c

KEY

ND = Not Detected
a = Destroyed
b = Dry Well
c = Thickness of free product, previous quarter
MW = Monitoring Well

2.2 Groundwater Sampling

Eight (8) monitoring wells were sampled on June 1, 2, and 5, 1989. Sampling began with monitoring wells MW-103, which was purged with a low volume hand bailer because the water volume in this well was insufficient to use an electrical submersible pump.

All other sampled wells were purged with an electric submersible pump or large volume hand bailer prior to sampling. Following sampling of well MW-103, sampling was resumed starting with monitoring well MW-104, which contained water with the lowest reported concentrations of hydrocarbon compounds, and proceeded sequentially to wells with progressively higher reported concentrations. This sampling sequence was followed in order to minimize the potential for cross contamination between wells. The production well (P-6 on Figure 2) was not sampled because its associated holding tank remained inoperable during the time of monitoring and sampling.

Before samples were collected, each well was purged of approximately four (4) well volumes of water using either a 1/3-horsepower Grundfos submersible pump, large volume PVC hand bailer, or a low volume Teflon hand bailer. Prior to purging of the monitoring wells with the submersible pump, a fire permit was obtained from refinery safety personnel to operate the gasoline powered generator at the well head. Upon removal of four (4) well volumes, the water's pH, temperature, and conductivity were measured and recorded. Purged water was discharged into 55-gallon drums to be later disposed by refinery personnel.

After purging, water samples were extracted from the monitoring wells using a decontaminated Teflon bailer. Samples were placed into two (2) 40-milliliter VOA vials. The VOA vials were clear glass and pretreated with dilute HCl, which inhibits the biodegradation of volatile aromatic compounds. All samples were properly labeled, sealed, and immediately placed on ice in a portable cooler. In addition, two (2) sample blanks consisting of distilled water obtained from a State-certified laboratory were

ENSR

collected (MW-001, MW-002). These sample blanks were extracted from the same Teflon bailer used to sample the monitoring wells. Monitoring wells MW-501, MW-502, and MW-504 contained free product and, therefore, were not sampled.

All equipment used to purge and sample the monitoring wells was decontaminated after each use. The decontamination procedure consisted of a tap water rinse, a thorough scrubbing in tap water and non-phosphatic detergent, a second tap water rinse, and a final rinse using distilled water.

A summary of the data recorded while sampling the monitoring wells is presented in Table 2. Conductivity values ranged from 1750 $\mu\text{mhos/cm}$ in MW-205 to 4260 $\mu\text{mhos/cm}$ in MW-104 and, in general, demonstrated decreasing values across the site from the northeast to the southwest. The measurements of water pH ranged from 6.0 to 7.0.

TABLE 2
SUMMARY OF GROUNDWATER SAMPLING DATA

MW No.	Time	Purge Method	Volume Purged (gals.)	Temp. (°C)	pH	Electrical Conductivity (μmhos/cm)	Water Turb.
101	05/31/89 (14:45)	a	a	a	a	a	a
103	06/1/89 (18:15)	SHB	1.5	26	6.6	2140	gray/ green, cloudy
104	06/1/89 (12:00)	SP	20	26	6.3	4260	sl. cloudy
201	06/05/89 (13:30)	LHB	25	25	6.6	b	lt.gray/ green sl. cloudy
202	a	a	a	a	a	a	a
203	06/02/89 (16:00)	LHB	25	23	6.3	3340	lt.gray, sl. cloudy
204	06/01/89 (16:00)	SP	20	26	6.3	2010	lt.gray, cloudy,
205	06/02/89 (11:05)	SP	25	25	7.0	1750	lt.tan, sl. cloudy
206	06/05/89 (16:20)	LHB	15	24	6.2	b	clear/ sl. cloudy
501	c	c	c	c	c	c	c
502	c	c	c	c	c	c	c

Table 2 (continued)

Summary of Groundwater Sampling Data

MW No.	Time	Purge Method	Volume Purged (gals.)	Temp. (°C)	pH	Electrical Conductivity (µmhos/cm)	Water Turb.
503	06/05/89 (15:15)	LHB	40	23	6.0	a	clear/ sl. cloudy
504	c	c	c	c	c	c	c

KEY

MW = Monitoring well
 a = Insufficient water in well
 b = Not measured
 c = Not sampled due to presence of free product in well
 LHB = Large volume hand bailer
 SHB = Low volume hand bailer
 SP = Submersible pump
 sl. = Slightly
 v = Very
 Turb= Turbidity

3.0 LABORATORY ANALYSIS

All samples were submitted to Enseco/Chemical Research Laboratories (CRL), Inc., a California-certified analytical laboratory, for analysis using EPA Test Methods 601 and 624. Standard chain-of-custody procedures and documents were utilized (Appendix A). Test methods were performed following EPA monitored quality assurance/quality control procedures assuring results of laboratory analyses.

3.1 EPA Test Method 601

EPA Method 601 is a purge and trap gas chromatographic method applicable to the determination of purgeable halocarbons from water samples as prescribed by 40 CFR 136.1. An inert gas is bubbled through a 5-ml water sample contained in a specifically-designed purging chamber and maintained at ambient temperature from the aqueous phase to the water vapor phase. The vapor is swept through a sorbent trap where the halocarbons are trapped. After purging is completed, the trap is heated and backflushed with the inert gas to desorb the halocarbons which are then detected with a halide specific detector. Two field reagent blanks were prepared from reagent water and carried through the sampling and handling protocol to check for possible contamination. Standard operating procedures require that compound identification should be supported by at least one additional qualitative technique, such as EPA Method 624.

3.2 EPA Test Method 624

EPA Method 624 is a purge and trap gas chromatographic/mass spectrometer (GC/MS) method applicable to the determination of purgeable organics from water samples, and is also prescribed by 40 CFR 136.1. An inert gas is bubbled through a 5-ml sample

ENSR

contained in a specifically designed purging chamber at ambient temperature. The purgeables are efficiently transferred from the aqueous phase to the vapor phase. The vapor is swept through a sorbent column where the purgeables are trapped. After purging is completed, the sorbent column is heated and backflushed with the inert gas to desorb the purgeables into a gas chromatographic column. The gas chromatograph is temperature programmed to separate the purgeables which are then detected with a mass spectrometer. Two field reagent blanks were prepared from reagent water and carried through the sampling and handling protocol to check for possible contamination.

4.0 ANALYTICAL RESULTS

All analytical results are presented on the laboratory reports in Appendix B. Results of analyses for benzene, toluene, ethylbenzene, and total xylenes (BTEX) performed for this and the previous six (6) quarterly reports are summarized on Table 3 and graphically exhibited in Figures 4, 5, 6, and 7. Results of analyses for purgeable halocarbons are summarized on Table 4. In water samples extracted from the eight (8) monitoring wells, benzene concentrations ranged from non-detected (less than 5 $\mu\text{g/L}$) to 3,100 $\mu\text{g/L}$, toluene concentrations ranged from non-detected (less than 5 $\mu\text{g/L}$) to 1,200 $\mu\text{g/L}$, ethylbenzene concentrations ranged from non-detected (less than 5 $\mu\text{g/L}$) to 2,300 $\mu\text{g/L}$, and concentrations of total xylenes ranged from non-detected (less than 5 $\mu\text{g/L}$) to 8,600 $\mu\text{g/L}$. BTEX concentrations did not exceed the method detection limits (5 $\mu\text{g/L}$) in sample blanks MW-001 and MW-002.

Concentrations of volatile organic compounds by EPA Test Method 624 were highest in monitoring wells MW-103 MW-201, MW-206, MW-503. The respective concentrations of benzene, toluene, ethyl benzene, and total xylenes in samples from these wells in $\mu\text{g/L}$ were as follows: benzene - 700, 350, 3100, 600; toluene - not detected, not detected 1200, 340; ethylbenzene - not detected, not detected, 2300, 630; total xylenes - not detected, 50, 8600, 1200. Lesser concentrations of these compounds were noted in samples from monitoring wells MW-203, MW-204, and MW-205. The respective concentrations of benzene, toluene, ethylbenzene, and total xylenes in samples from these wells in $\mu\text{g/L}$ were as follows: benzene - 110, 76, 120; toluene - not detected, not detected, 5; ethylbenzene - 5, not detected, not detected; total xylenes - not detected in any of these well samples. No volatile organic compounds were detected in the sample from monitoring well MW-104.

Additional volatile organic compounds were detected in several well samples by EPA Test Method 624. These include 68 $\mu\text{g/L}$ of

ENSR

dichloroethene at MW-204, 820 $\mu\text{g/L}$ of acetone at MW-206, and 710 $\mu\text{g/l}$ of chloroethylvinyl ether at MW-503.

All well samples were also analyzed by EPA Test Method 601 for purgeable halocarbons. These tests were negative for all constituents except 130 $\mu\text{g/L}$ of methylene chloride at MW-103 and 20 $\mu\text{g/L}$ of dichloroethene of MW-203. Detection of methylene chloride is attributed to laboratory error as it was not detected by method 624.

FX-9 Wells

FX-9 Wells

FX-9 Wells

FX-9 Wells

TABLE 3
SUMMARY OF ANALYTICAL TEST RESULTS
VOLATILE ORGANIC COMPOUNDS
(EPA Test Method 624)
Values in $\mu\text{g/L}$

MW					
No.	Date	<u>Benzene</u>	<u>Ethyl benzene</u>	<u>Toluene</u>	<u>Total Xylenes</u>
101	June 89	NA	NA	NA	NA
	Mar. 89	NA	NA	NA	NA
	Dec. 88	490	49	28	ND<20
	Sept. 88	310	34	10	13
	June 88	620	ND<50	ND<50	100
	Mar. 88	340	ND<100	ND<100	ND<100
	Dec. 87	140	ND<5	ND<5	ND<5
103	June 89	700	ND<20	ND<20	ND<20
	Mar. 89	940	ND<20	ND<20	ND<20
	Dec. 88	370	ND<5	ND<5	ND<5
	Sept. 88	300	ND<5	ND<5	8
	June 88	970	ND<50	74	ND<50
	Mar. 88	ND<5	ND<5	ND<5	ND<5
	Dec. 87	12	ND<5	ND<5	ND<5
104	June 89	ND<5	ND<5	ND<5	ND<5
	Mar. 89	ND<5	ND<5	ND<5	ND<5
	Dec. 88	ND<5	ND<5	ND<5	ND<5
	Sept. 88	ND<5	ND<5	ND<5	ND<5
	June 88	ND<5	ND<5	ND<5	ND<5
	Mar. 88	110	23	68	17
	Dec. 87	ND<5	ND<5	ND<5	ND<5

TABLE 3
SUMMARY OF ANALYTICAL TEST RESULTS
VOLATILE ORGANIC COMPOUNDS
(EPA Test Method 624)

Values in $\mu\text{g/L}$
(Continued)

MW					
No.	Date	<u>Benzene</u>	<u>Ethyl benzene</u>	<u>Toluene</u>	<u>Total Xylenes</u>
201	June 89	350	ND<50	ND<50	50
	Mar. 89	210	24	27	47
	Dec. 88	420	19	65	100
	Sept. 88	520	110	210	400
	June 88	1000	ND<50	150	250
	Mar. 88	5600	260	880	1400
	Dec. 87	290	ND<5	6	142
203	June 89	110	5	ND<5	ND<5
	Mar. 89	110	ND<5	ND<5	ND<5
	Dec. 88	64	ND<5	ND<5	ND<5
	Sept. 88	76	ND<5	ND<5	ND<5
	June 88	46	ND<5	ND<5	ND<5
	Mar. 88	103	ND<5	ND<5	ND<5
	Dec. 87	120	ND<5	ND<1	ND<1
204	June 89	76	ND<5	ND<5	ND<5
	Mar. 89	39	ND<5	ND<5	ND<5
	Dec. 88	33	ND<5	ND<5	ND<5
	Sept. 88	6	ND<5	ND<5	ND<5
	June 88	19	ND<5	ND<5	ND<5
	Mar. 88	120	ND<20	ND<20	ND<20
	Dec. 87	9	ND<5	ND<5	ND<5

TABLE 3
SUMMARY OF ANALYTICAL TEST RESULTS
VOLATILE ORGANIC COMPOUNDS
(EPA Test Method 624)

Values in $\mu\text{g/L}$
(Continued)

MW					
<u>No.</u>	<u>Date</u>	<u>Benzene</u>	<u>Ethyl benzene</u>	<u>Toluene</u>	<u>Total Xylenes</u>
205	June 89	120	ND<5	5	ND<5
	Mar. 89	40	ND<5	ND<5	ND<5
	Dec. 88	120	ND<5	ND<5	ND<5
	Sept. 88	27	ND<5	ND<5	ND<5
	June 88	13	ND<5	ND<5	ND<5
	Mar. 88	74	ND<5	ND<5	8
	Dec. 87	ND<5	ND<5	ND<5	ND<5
206	June 89	3100	2300	1200	8600
	Mar. 89	2700	2400	3200	12000
	Dec. 88	4300	2100	920	5500
	Sept. 88	4200	2000	1000	6600
	June 88	5800	2100	2400	4900
	Mar. 88	6400	3400	3900	7300
	Dec. 87	7400	900	2300	5000

TABLE 3
SUMMARY OF ANALYTICAL TEST RESULTS
VOLATILE ORGANIC COMPOUNDS
(EPA Test Method 624)

Values in $\mu\text{g/L}$
(Continued)

MW			Ethyl		Total
No.	Date	Benzene	benzene	Toluene	Xylenes
501	June 89		*Free product present*		
	Mar. 89		*Free product present*		
	Dec. 88		*Free product present*		
	Sept. 88		*Free product present*		
	June 88		*Free product present*		
	Mar. 88	4900	11000	9100	8200
	Dec. 87	8300	400	2000	1100
502	June 89		*Free product present*		
	Mar. 89	5300	1900	1200	7100
	Dec. 88	6500	1500	860	5500
	Sept. 88	13000	2800	1800	12000
	June 88	950	62	79	16
	Mar. 88	3600	120	400	2700
	Dec. 87	13000	900	1200	4800
503	June 89	600	630	340	1200
	Mar. 89	400	360	190	750
	Dec. 88	1500	380	570	960
	Sept. 88	800	300	280	910
	June 88	600	340	140	600
	Mar. 88	2700	1300	1300	2400
	Dec. 87	220	ND<10	44	660

TABLE 3
SUMMARY OF ANALYTICAL TEST RESULTS
VOLATILE ORGANIC COMPOUNDS
(EPA Test Method 624)

Values in $\mu\text{g/L}$
(Continued)

P-6	June 89	-	Not operational		
	Mar. 89	-	Not operational		
	Dec. 88	-	Not operational		
001*	June 89	ND<5	ND<5	ND<5	ND<5
002*	June 89	ND<5	ND<5	ND<5	ND<5

KEY

MW = Monitoring Well

NA = Not analyzed this quarter, because of insufficient well volume.

ND = This compound was not detected; the limit of detection for this analysis is the amount stated in the table above.

* = Sample Blank

TABLE 4
SUMMARY OF ANALYTICAL TEST RESULTS -
PURGEABLE HALOCARBON COMPOUNDS

<u>Monitoring Well Number</u>	<u>Concentration of Compounds Detected</u>	<u>Method 601 ($\mu\text{g/L}$)</u>	<u>Method 624 ($\mu\text{g/L}$)</u>
101	Not Analyzed		
103*	Methylene Chloride 2-Hexanone	130	68
104	None Detected		
201*	None Detected		
203*	trans-1,2- Dichloroethene	20	23
204*	1,2-Dichloroethane		7
205*	None Detected		
206**	Acetone		820
503**	2-chloroethyvinyl ether		710
001 ^a	None Detected		
002 ^a	None Detected		

KEY

* A higher than normal detection limits of 10 $\mu\text{g/L}$ or 20 $\mu\text{g/L}$ was used due to matrix interference.

** A higher than normal detection limit of 100 $\mu\text{g/L}$ was used due to matrix interference.

a = Sample blank

5.0 CONCLUSIONS

The monitoring and analytical results derived in the first quarter of 1988 reveal several deviations from previous quarters (Tables 3 and 4). Analysis of the most recent results compared with the results from the previous quarter (April, 1989) indicate the following:


- o Free product thickness in monitoring well MW-501 slightly increased by .06 feet from .75 feet to .81 feet.
- o Free product thickness in monitoring well MW-504 decreased by .55 feet from 2.75 feet to 2.20 feet.
- o Free product was detected in monitoring well MW-502 at a thickness of 3.13 feet.
- o Benzene concentrations remained non-detected in MW-104; decreased in MW-103; and increased in MW-201, MW-204, MW-205, MW-206 and MW-503; and remained the same in MW-203.
- o Toluene concentrations remained non-detected in MW-103, MW-104, MW-203, and MW-204; decreased in MW-201 and MW-206; and increased in MW-205 and MW-503.
- o Ethylbenzene concentrations remained non-detected in MW-103, MW-104, MW-204, and MW-205; decreased in MW-201 and MW-206; and increased in MW-203 and MW-503.
- o Total xylene concentrations remained non-detected in MW-103, MW-104, MW-203, MW-204, and MW-205; decreased in MW-206; and increased in MW-201 and MW-503.
- o Acetone was detected in MW-206 only at a concentration of 820 $\mu\text{g/L}$. All other wells remained at non-detected levels.
- o In general, analytical results of water samples from monitoring wells MW-104, MW-201, MW-203, MW-204, and MW-205 remain consistent with the results from previous quarters.
- o Analytical results of water samples from monitoring wells MW-103 and MW-206 exhibited a decrease in overall BTEX levels.

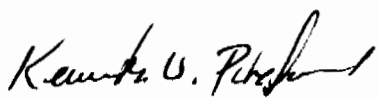
ENSR

- o Analytical results of water samples from monitoring well MW-503 exhibited a slight increase in overall BTEX levels.

Respectfully submitted,

ENSR Consulting and Engineering


James Broad
Project Manager


Kenneth W. Pitchford, R.G. 4135
Senior Hydrogeologist

5500005.jul

ENSR

APPENDIX A
CHAIN-OF-CUSTODY DOCUMENTS

CHAIN OF CUSTODY RECORD

Client/Project Name Powerline			Project Location Santa Fe Springs			ANALYSES <div style="display: flex; justify-content: space-around; font-size: 2em;"> 601 624 </div>						
Project No. 5500-002-102			Field Logbook No.									
Sampler: (Signature) Mary M. Trask			Chain of Custody Tape No.									
Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample								REMARKS
MW-204	6/1/89	4:00 PM		Liquid	X							
MW-204	6/1/89	4:05 PM				X						
MW-205	6/2/89	11:00 AM			X							
MW-205	6/2/89	11:05 AM				X						
MW-103	6/1/89	6:15 PM			X							
MW-103	6/1/89	6:15 PM		Liquid		X						
Relinquished by: (Signature) Mary M. Trask				Date 6/2/89	Time PM 5:53	Received by: (Signature)				Date 6-02	Time 6:00 pm	
Relinquished by: (Signature)				Date	Time	Received by: (Signature)				Date	Time	
Relinquished by: (Signature)				Date	Time	Received for Laboratory: (Signature)				Date	Time	
Sample Disposal Method:				Disposed of by: (Signature) noel				Date 6-02	Time 6:00 pm			
SAMPLE COLLECTOR Mary M. Trask ENSR Consulting & Engineering 19782 MacArthur Blvd., Ste 365 Irvine, CA 92715 (714) 476-0321				ANALYTICAL LABORATORY CRL (ENSR Co.) Garden Grove, CA				ENSR				
								Pg 1 of 2				

CHAIN OF CUSTODY RECORD

Client/Project Name Powerline			Project Location Santa Fe Springs			ANALYSES 601 624					
Project No. 5500-002-102			Field Logbook No.								
Sampler: (Signature) Mary M. Trask			Chain of Custody Tape No.								
Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample							REMARKS
MW-001	6/2/89	11:20		Liquid	X						
MW-001	6/2/89	11:20				X					
MW-104	6/1/89	12:00 PM			X	X					
MW-104	6/1/89	12:00 PM				X					
MW-203	6/2/89	4:00 PM			X						
MW-203	6/2/89	4:00 PM		Liquid		X					
Relinquished by: (Signature) Mary M. Trask					Date 6/2/89	Time 5:53 PM	Received by: (Signature)			Date 6-02-89	Time 6:00pm
Relinquished by: (Signature)					Date	Time	Received by: (Signature)			Date	Time
Relinquished by: (Signature)					Date	Time	Received for Laboratory: (Signature)			Date	Time
Sample Disposal Method:					Disposed of by: (Signature) Mary M. Trask			Date 6-02-89	Time 6:00pm		
SAMPLE COLLECTOR Mary M. Trask ENSR Consulting & Engineering 19782 MacArthur Blvd, Ste. 305 Irvine, CA 92715 (714) 476-0321					ANALYTICAL LABORATORY CRL (ENSCO) Garden Grove, CA					ENSR	
										Pg 2 of 2	

CHAIN OF CUSTODY RECORD

Client/Project Name POWERINE			Project Location SANTA FE SPRINGS			ANALYSES						
Project No. 5500-002-102			Field Logbook No.									
Sampler: (Signature) <i>John Nordenstam</i>			Chain of Custody Tape No.									
Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample	601	624						REMARKS
MW-201	6/5/89	1:30 PM		WATER	X							
MW-201		1:30 PM				X						
MW-503		3:15 PM			X							
MW-503		3:15 PM				X						
MW-206		4:20 PM			X							
MW-206		4:20 PM				X						
MW-002		4:40 PM			X							
MW-002		4:40 PM				X						
Relinquished by: (Signature) <i>John Nordenstam</i>				Date 6/5/89	Time 6:12 PM	Received by: (Signature) _____				Date _____	Time _____	
Relinquished by: (Signature) _____				Date _____	Time _____	Received by: (Signature) _____				Date _____	Time _____	
Relinquished by: (Signature) _____				Date _____	Time _____	Received for Laboratory: (Signature) <i>[Signature]</i>				Date 6/5/89	Time 6:12 PM	
Sample Disposal Method:				Disposed of by: (Signature) _____						Date _____	Time _____	
SAMPLE COLLECTOR JOHN NORDENSTAM ENSR CONSULTING & ENGINEERING 19782 MACARTHUR BLVD. SUITE 365 IRVINE, CA 92715 (714) 476-0321				ANALYTICAL LABORATORY CRL (ENSCO) GARDEN GROVE, CA						ERT No. (OF)		

ENSR

APPENDIX B
LABORATORY REPORTS

JUN 22 1989

Enseco

Enseco - CRL

7440 Lincoln Way • Garden Grove, CA 92641
(714) 898-6370 • (213) 598-0458 • (800) LAB-1-CRL
FAX: (714) 891-5917

June 15, 1989

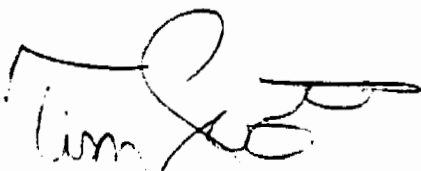
ENSR
19782 MacArthur Blvd., Suite 365
Irvine, CA 92715
ATTN: MS. MARY M. TRASK

Analysis No.: G-8915326-001/006
Date Sampled: 1-JUN-1989
2-JUN-1989
Date Sample Rec'd: 2-JUN-1989
Project: (5500-002-102) POWERINE
SANTA FE SPRINGS

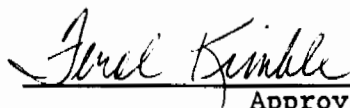
Enclosed with this letter is the report on the chemical and physical analyses on the samples from ANALYSIS NO: G-8915326-001/006 shown above.

The samples were received by CRL in a chilled state, intact and with the chain-of-custody record attached. Sample seals were intact.

Please note that ND() means not detected at the detection limit expressed within the parentheses.



Reviewed



Approved

The Report Cover Letter is an integral part of this report.

This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the client to whom it is addressed. Any reproduction of this report or use of this Laboratory's name for advertising or publicity purposes without authorization is prohibited.

Enseco - CRL / South Coast

7440 Lincoln Way • Garden Grove, CA 92641
 (714) 898-6370 • (213) 598-0458 • (800) LAB-1-CRL
 FAX: (714) 891-5917

Laboratory Report

ENSR
 19782 MacArthur Blvd., Suite 365
 Irvine, CA 92715
 ATTN: MS. MARY M. TRASK

Analysis No.: G-8915326-001
 Date Sampled: 1-JUN-1989
 Date Sample Rec'd: 2-JUN-1989
 Date Analyzed: 9-JUN-1989
 Sample Type: LIQUID

Project: (5500-002-102) POWERINE - SANTA FE SPRINGS
 Sample ID: MW-103

Halogenated Volatile Organics, EPA 601

Units: ug/L

Parameter	Result	Blank	Detection Limit
Chloromethane	ND	ND	10.
Bromomethane	ND	ND	10.
Vinyl Chloride	ND	ND	10.
Chloroethane	ND	ND	10.
Methylene Chloride	130.	ND	10.
Trichlorofluoromethane	ND	ND	10.
1,1-Dichloroethene	ND	ND	10.
1,1-Dichloroethane	ND	ND	10.
trans-1,2-Dichloroethene	ND	ND	10.
Chloroform	ND	ND	10.
1,2-Dichloroethane	ND	ND	10.
1,1,1-Trichloroethane	ND	ND	10.
Carbon Tetrachloride	ND	ND	10.
Bromodichloromethane	ND	ND	10.
1,2-Dichloropropane	ND	ND	10.
cis-1,3-Dichloropropene	ND	ND	10.
Trichloroethene	ND	ND	10.
Dibromochloromethane	ND	ND	10.
1,1,2-Trichloroethane	ND	ND	10.
trans-1,3-Dichloropropene	ND	ND	10.
2-Chloroethylvinyl ether	ND	ND	10.
Bromoform	ND	ND	10.
Tetrachloroethene	ND	ND	10.
1,1,2,2-Tetrachloroethane	ND	ND	10.
Chlorobenzene	ND	ND	10.
1,3-Dichlorobenzene	ND	ND	10.
1,2-Dichlorobenzene	ND	ND	10.
1,4-Dichlorobenzene	ND	ND	10.

NOTE: Higher detection limits due to sample matrix.

Enseco - CRL

7440 Lincoln Way • Garden Grove, CA 92641
(714) 898-6370 • (213) 598-0458 • (800) LAB-I-CRL
FAX: (714) 891-5917

Laboratory Report

ENSR
19782 MacArthur Blvd., Suite 365
Irvine, CA 92715
ATTN: MS. MARY M. TRASK

Analysis No.: G-8915326-002
Date Sampled: 1-JUN-1989
Date Sample Rec'd: 2-JUN-1989
Date Analyzed: 9-JUN-1989
Sample Type: LIQUID

Project: (5500-002-102) POWERINE - SANTA FE SPRINGS
Sample ID: MW-104

Halogenated Volatile Organics, EPA 601

Units: ug/L

Parameter	Result	Blank	Detection Limit
Chloromethane	ND	ND	10.
Bromomethane	ND	ND	10.
Vinyl Chloride	ND	ND	10.
Chloroethane	ND	ND	10.
Methylene Chloride	ND	ND	10.
Trichlorofluoromethane	ND	ND	10.
1,1-Dichloroethene	ND	ND	10.
1,1-Dichloroethane	ND	ND	10.
trans-1,2-Dichloroethene	ND	ND	10.
Chloroform	ND	ND	10.
1,2-Dichloroethane	ND	ND	10.
1,1,1-Trichloroethane	ND	ND	10.
Carbon Tetrachloride	ND	ND	10.
Bromodichloromethane	ND	ND	10.
1,2-Dichloropropane	ND	ND	10.
cis-1,3-Dichloropropene	ND	ND	10.
Trichloroethene	ND	ND	10.
Dibromochloromethane	ND	ND	10.
1,1,2-Trichloroethane	ND	ND	10.
trans-1,3-Dichloropropene	ND	ND	10.
2-Chloroethylvinyl ether	ND	ND	10.
Bromoform	ND	ND	10.
Tetrachloroethene	ND	ND	10.
1,1,2,2-Tetrachloroethane	ND	ND	10.
Chlorobenzene	ND	ND	10.
1,3-Dichlorobenzene	ND	ND	10.
1,2-Dichlorobenzene	ND	ND	10.
1,4-Dichlorobenzene	ND	ND	10.

NOTE: Higher detection limits due to sample matrix.

The Report Cover Letter is an integral part of this report.

This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the client to whom it is addressed. Any reproduction of this report or use of this Laboratory's name for advertising or publicity purposes without authorization is prohibited.

Enseco - CRL

7440 Lincoln Way • Garden Grove, CA 92641
(714) 898-6370 • (213) 598-0458 • (800) LAB-1-CRL
FAX: (714) 891-5917

Laboratory Report

ENSR
19782 MacArthur Blvd., Suite 365
Irvine, CA 92715
ATTN: MS. MARY M. TRASK

Analysis No.: G-8915326-003
Date Sampled: 1-JUN-1989
Date Sample Rec'd: 2-JUN-1989
Date Analyzed: 9-JUN-1989
Sample Type: LIQUID

Project: (5500-002-102) POWERINE - SANTA FE SPRINGS
Sample ID: MW-204

Halogenated Volatile Organics, EPA 601

Units: ug/L

Parameter	Result	Blank	Detection Limit
Chloromethane	ND	ND	10
Bromomethane	ND	ND	10
Vinyl Chloride	ND	ND	10
Chloroethane	ND	ND	10
Methylene Chloride	ND	ND	10
Trichlorofluoromethane	ND	ND	10
1,1-Dichloroethene	ND	ND	10
1,1-Dichloroethane	ND	ND	10
trans-1,2-Dichloroethene	ND	ND	10
Chloroform	ND	ND	10
1,2-Dichloroethane	ND	ND	10
1,1,1-Trichloroethane	ND	ND	10
Carbon Tetrachloride	ND	ND	10
Bromodichloromethane	ND	ND	10
1,2-Dichloropropane	ND	ND	10
cis-1,3-Dichloropropene	ND	ND	10
Trichloroethene	ND	ND	10
Dibromochloromethane	ND	ND	10
1,1,2-Trichloroethane	ND	ND	10
trans-1,3-Dichloropropene	ND	ND	10
2-Chloroethylvinyl ether	ND	ND	10
Bromoform	ND	ND	10
Tetrachloroethene	ND	ND	10
1,1,2,2-Tetrachloroethane	ND	ND	10
Chlorobenzene	ND	ND	10
1,3-Dichlorobenzene	ND	ND	10
1,2-Dichlorobenzene	ND	ND	10
1,4-Dichlorobenzene	ND	ND	10

NOTE: Higher detection limits due to sample matrix.

The Report Cover Letter is an integral part of this report.

This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the client to whom it is addressed. Any reproduction of this report or use of this Laboratory's name for advertising or publicity purposes without authorization is prohibited.

Enseco - CRL

7440 Lincoln Way • Garden Grove, CA 92641
 (714) 898-6370 • (213) 598-0458 • (800) LAB-1-CRL
 FAX: (714) 891-5917

Laboratory Report

ENSR
 19782 MacArthur Blvd., Suite 365
 Irvine, CA 92715
 ATTN: MS. MARY M. TRASK

Analysis No.: G-8915326-004
 Date Sampled: 2-JUN-1989
 Date Sample Rec'd: 2-JUN-1989
 Date Analyzed: 9-JUN-1989
 Sample Type: LIQUID

Project: (5500-002-102) POWERINE - SANTA FE SPRINGS
 Sample ID: MW-001

Halogenated Volatile Organics, EPA 601

Units: ug/L

Parameter	Result	Blank	Detection Limit
Chloromethane	ND	ND	10.
Bromomethane	ND	ND	10.
Vinyl Chloride	ND	ND	10.
Chloroethane	ND	ND	10.
Methylene Chloride	ND	ND	10.
Trichlorofluoromethane	ND	ND	10.
1,1-Dichloroethene	ND	ND	10.
1,1-Dichloroethane	ND	ND	10.
trans-1,2-Dichloroethene	ND	ND	10.
Chloroform	ND	ND	10.
1,2-Dichloroethane	ND	ND	10.
1,1,1-Trichloroethane	ND	ND	10.
Carbon Tetrachloride	ND	ND	10.
Bromodichloromethane	ND	ND	10.
1,2-Dichloropropane	ND	ND	10.
cis-1,3-Dichloropropene	ND	ND	10.
Trichloroethene	ND	ND	10.
Dibromochloromethane	ND	ND	10.
1,1,2-Trichloroethane	ND	ND	10.
trans-1,3-Dichloropropene	ND	ND	10.
2-Chloroethylvinyl ether	ND	ND	10.
Bromoform	ND	ND	10.
Tetrachloroethene	ND	ND	10.
1,1,2,2-Tetrachloroethane	ND	ND	10.
Chlorobenzene	ND	ND	10.
1,3-Dichlorobenzene	ND	ND	10.
1,2-Dichlorobenzene	ND	ND	10.
1,4-Dichlorobenzene	ND	ND	10.

NOTE: Higher detection limits due to sample matrix.

The Report Cover Letter is an integral part of this report.

This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the client to whom it is addressed. Any reproduction of this report or use of this Laboratory's name for advertising or publicity purposes without authorization is prohibited.

Enseco - CRL / South Coast

7440 Lincoln Way • Garden Grove, CA 92641
(714) 898-6370 • (213) 598-0458 • (800) LAB-1-CRL
FAX: (714) 891-5917

Laboratory Report

ENSR
19782 MacArthur Blvd., Suite 365
Irvine, CA 92715
ATTN: MS. MARY M. TRASK

Analysis No.: G-8915326-005
Date Sampled: 2-JUN-1989
Date Sample Rec'd: 2-JUN-1989
Date Analyzed: 10-JUN-1989
Sample Type: LIQUID

Project: (5500-002-102) POWERINE - SANTA FE SPRINGS
Sample ID: MW-203

Halogenated Volatile Organics, EPA 601

Units: ug/L

Parameter	Result	Blank	Detection Limit
Chloromethane	ND	ND	10
Bromomethane	ND	ND	10
Vinyl Chloride	ND	ND	10
Chloroethane	ND	ND	10
Methylene Chloride	ND	ND	10
Trichlorofluoromethane	ND	ND	10
1,1-Dichloroethene	ND	ND	10
1,1-Dichloroethane	ND	ND	10
trans-1,2-Dichloroethene	20.	ND	10
Chloroform	ND	ND	10
1,2-Dichloroethane	ND	ND	10
1,1,1-Trichloroethane	ND	ND	10
Carbon Tetrachloride	ND	ND	10
Bromodichloromethane	ND	ND	10
1,2-Dichloropropane	ND	ND	10
cis-1,3-Dichloropropene	ND	ND	10
Trichloroethene	ND	ND	10
Dibromochloromethane	ND	ND	10
1,1,2-Trichloroethane	ND	ND	10
trans-1,3-Dichloropropene	ND	ND	10
2-Chloroethylvinyl ether	ND	ND	10
Bromoform	ND	ND	10
Tetrachloroethene	ND	ND	10
1,1,2,2-Tetrachloroethane	ND	ND	10
Chlorobenzene	ND	ND	10
1,3-Dichlorobenzene	ND	ND	10
1,2-Dichlorobenzene	ND	ND	10
1,4-Dichlorobenzene	ND	ND	10

NOTE: Higher detection limits due to sample matrix.

Enseco - CRL

7440 Lincoln Way • Garden Grove, CA 92641
 (714) 898-6370 • (213) 598-0458 • (800) LAB-1-CRL
 FAX: (714) 891-5917

Laboratory Report

ENSR
 19782 MacArthur Blvd., Suite 365
 Irvine, CA 92715
 ATTN: MS. MARY M. TRASK

Analysis No.: G-8915326-006
 Date Sampled: 2-JUN-1989
 Date Sample Rec'd: 2-JUN-1989
 Date Analyzed: 9-JUN-1989
 Sample Type: LIQUID

Project: (5500-002-102) POWERINE - SANTA FE SPRINGS
 Sample ID: MW-205

Halogenated Volatile Organics, EPA 601

Units: ug/L

Parameter	Result	Blank	Detection Limit
Chloromethane	ND	ND	10.
Bromomethane	ND	ND	10.
Vinyl Chloride	ND	ND	10.
Chloroethane	ND	ND	10.
Methylene Chloride	ND	ND	10.
Trichlorofluoromethane	ND	ND	10.
1,1-Dichloroethene	ND	ND	10.
1,1-Dichloroethane	ND	ND	10.
trans-1,2-Dichloroethene	ND	ND	10.
Chloroform	ND	ND	10.
1,2-Dichloroethane	ND	ND	10.
1,1,1-Trichloroethane	ND	ND	10.
Carbon Tetrachloride	ND	ND	10.
Bromodichloromethane	ND	ND	10.
1,2-Dichloropropane	ND	ND	10.
cis-1,3-Dichloropropene	ND	ND	10.
Trichloroethene	ND	ND	10.
Dibromochloromethane	ND	ND	10.
1,1,2-Trichloroethane	ND	ND	10.
trans-1,3-Dichloropropene	ND	ND	10.
2-Chloroethylvinyl ether	ND	ND	10.
Bromoform	ND	ND	10.
Tetrachloroethene	ND	ND	10.
1,1,2,2-Tetrachloroethane	ND	ND	10.
Chlorobenzene	ND	ND	10.
1,3-Dichlorobenzene	ND	ND	10.
1,2-Dichlorobenzene	ND	ND	10.
1,4-Dichlorobenzene	ND	ND	10.

NOTE: Higher detection limits due to sample matrix.

The Report Cover Letter is an integral part of this report.

This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the client to whom it is addressed. Any reproduction of this report or use of this Laboratory's name for advertising or publicity purposes without authorization is prohibited.

Enseco - CRL

7440 Lincoln Way • Garden Grove, CA 92641
(714) 898-6370 • (213) 598-0458 • (800) LAB-1-CRL
FAX: (714) 891-5917

Laboratory Report

ENSR
19782 MacArthur Blvd., Suite 365
Irvine, CA 92715
ATTN: MS. MARY M. TRASK

Analysis No.: G-8915326-001
Date Sampled: 1-JUN-1989
Date Sample Rec'd: 2-JUN-1989
Date Analyzed: 6-JUN-1989
Sample Type: LIQUID

Project: (5500-002-102) POWERINE - SANTA FE SPRINGS
Sample ID: MW-103

Purgeable Organics, EPA 624

Units: ug/L

Parameter	Result	Blank	Detection Limit
Chloromethane	ND	ND	50
Bromomethane	ND	ND	50
Vinyl Chloride	ND	ND	50
Chloroethane	ND	ND	50
Methylene Chloride	ND	ND	20
Acetone	ND	ND	50
Carbon Disulfide	ND	ND	20
1,1-Dichloroethene	ND	ND	20
1,1-Dichloroethane	ND	ND	20
trans-1,2-Dichloroethene	ND	ND	20
Chloroform	ND	ND	20
1,2-Dichloroethane	ND	ND	20
2-Butanone	ND	ND	50
1,1,1-Trichloroethane	ND	ND	20
Carbon Tetrachloride	ND	ND	20
Vinyl Acetate	ND	ND	50
Bromodichloromethane	ND	ND	20
1,2-Dichloropropane	ND	ND	20
trans-1,3-Dichloropropene	ND	ND	20
Trichloroethene	ND	ND	20
Dibromochloromethane	ND	ND	20
1,1,2-Trichloroethane	ND	ND	20
Benzene	700.	ND	20
cis-1,3-Dichloropropene	ND	ND	20
2-Chloroethylvinyl ether	ND	ND	50
Bromoform	ND	ND	20
4-Methyl-2-pentanone	ND	ND	50
2-Hexanone	68.	ND	50
Tetrachloroethene	ND	ND	20
1,1,2,2-Tetrachloroethane	ND	ND	20
Toluene	ND	ND	20
Chlorobenzene	ND	ND	20
Ethylbenzene	ND	ND	20
Styrene	ND	ND	20
Xylenes, Total	ND	ND	20

The Report Cover Letter is an integral part of this report.

This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the client to whom it is addressed. Any reproduction of this report or use of this Laboratory's name for advertising or publicity purposes without authorization is prohibited.

Enseco - CRL

7440 Lincoln Way • Garden Grove, CA 92641
(714) 898-6370 • (213) 598-0458 • (800) LAB-1-CRL
FAX: (714) 891-5917

Laboratory Report

ENSR
19782 MacArthur Blvd., Suite 365
Irvine, CA 92715
ATTN: MS. MARY M. TRASK

Analysis No.: G-8915326-002
Date Sampled: 1-JUN-1989
Date Sample Rec'd: 2-JUN-1989
Date Analyzed: 6-JUN-1989
Sample Type: LIQUID

Project: (5500-002-102) POWERINE - SANTA FE SPRINGS
Sample ID: MW-104

Purgeable Organics, EPA 624

Units: ug/L

Parameter	Result	Blank	Detection Limit
Chloromethane	ND	ND	10
Bromomethane	ND	ND	10
Vinyl Chloride	ND	ND	10
Chloroethane	ND	ND	10
Methylene Chloride	ND	ND	5
Acetone	ND	ND	10
Carbon Disulfide	ND	ND	5
1,1-Dichloroethene	ND	ND	5
1,1-Dichloroethane	ND	ND	5
trans-1,2-Dichloroethene	ND	ND	5
Chloroform	ND	ND	5
1,2-Dichloroethane	ND	ND	5
2-Butanone	ND	ND	10
1,1,1-Trichloroethane	ND	ND	5
Carbon Tetrachloride	ND	ND	5
Vinyl Acetate	ND	ND	10
Bromodichloromethane	ND	ND	5
1,2-Dichloropropane	ND	ND	5
trans-1,3-Dichloropropene	ND	ND	5
Trichloroethene	ND	ND	5
Dibromochloromethane	ND	ND	5
1,1,2-Trichloroethane	ND	ND	5
Benzene	ND	ND	5
cis-1,3-Dichloropropene	ND	ND	5
2-Chloroethylvinyl ether	ND	ND	10
Bromoform	ND	ND	5
4-Methyl-2-pentanone	ND	ND	10
2-Hexanone	ND	ND	10
Tetrachloroethene	ND	ND	5
1,1,2,2-Tetrachloroethane	ND	ND	5
Toluene	ND	ND	5
Chlorobenzene	ND	ND	5
Ethylbenzene	ND	ND	5
Styrene	ND	ND	5
Xylenes, Total	ND	ND	5

The Report Cover Letter is an integral part of this report.

This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the client to whom it is addressed. Any reproduction of this report or use of this Laboratory's name for advertising or publicity purposes without authorization is prohibited.

Enseco - CRL

7440 Lincoln Way • Garden Grove, CA 92641
(714) 898-6370 • (213) 598-0458 • (800) LAB-1-CRL
FAX: (714) 891-5917

Laboratory Report

ENSR
19782 MacArthur Blvd., Suite 365
Irvine, CA 92715
ATTN: MS. MARY M. TRASK

Analysis No.: G-8915326-003
Date Sampled: 1-JUN-1989
Date Sample Rec'd: 2-JUN-1989
Date Analyzed: 6-JUN-1989
Sample Type: LIQUID

Project: (5500-002-102) POWERINE - SANTA FE SPRINGS
Sample ID: MW-204

Purgeable Organics, EPA 624

Units: ug/L

Parameter	Result	Blank	Detection Limit
Chloromethane	ND	ND	10
Bromomethane	ND	ND	10
Vinyl Chloride	ND	ND	10
Chloroethane	ND	ND	10
Methylene Chloride	ND	ND	5
Acetone	ND	ND	10
Carbon Disulfide	ND	ND	5
1,1-Dichloroethene	ND	ND	5
1,1-Dichloroethane	ND	ND	5
trans-1,2-Dichloroethene	ND	ND	5
Chloroform	ND	ND	5
1,2-Dichloroethane	7.	ND	5
2-Butanone	ND	ND	10
1,1,1-Trichloroethane	ND	ND	5
Carbon Tetrachloride	ND	ND	5
Vinyl Acetate	ND	ND	10
Bromodichloromethane	ND	ND	5
1,2-Dichloropropane	ND	ND	5
trans-1,3-Dichloropropene	ND	ND	5
Trichloroethene	ND	ND	5
Dibromochloromethane	ND	ND	5
1,1,2-Trichloroethane	ND	ND	5
- Benzene	76.	ND	5
cis-1,3-Dichloropropene	ND	ND	5
2-Chloroethylvinyl ether	ND	ND	10
Bromoform	ND	ND	5
4-Methyl-2-pentanone	ND	ND	10
2-Hexanone	ND	ND	10
Tetrachloroethene	ND	ND	5
1,1,2,2-Tetrachloroethane	ND	ND	5
- Toluene	ND	ND	5
Chlorobenzene	ND	ND	5
- Ethylbenzene	ND	ND	5
Styrene	ND	ND	5
- Xylenes, Total	ND	ND	5

The Report Cover Letter is an integral part of this report.

This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the client to whom it is addressed. Any reproduction of this report or use of this Laboratory's name for advertising or publicity purposes without authorization is prohibited.

Enseco - CRL

7440 Lincoln Way • Garden Grove, CA 92641
(714) 898-6370 • (213) 598-0458 • (800) LAB-1-CRL
FAX: (714) 891-5917

Laboratory Report

ENSR
19782 MacArthur Blvd., Suite 365
Irvine, CA 92715
ATTN: MS. MARY M. TRASK

Analysis No.: G-8915326-004
Date Sampled: 2-JUN-1989
Date Sample Rec'd: 2-JUN-1989
Date Analyzed: 6-JUN-1989
Sample Type: LIQUID

Project: (5500-002-102) POWERINE - SANTA FE SPRINGS
Sample ID: MW-001

Purgeable Organics, EPA 624

Units: ug/L

Parameter	Result	Blank	Detection Limit
Chloromethane	ND	ND	10
Bromomethane	ND	ND	10
Vinyl Chloride	ND	ND	10
Chloroethane	ND	ND	10
Methylene Chloride	ND	ND	5
Acetone	ND	ND	10
Carbon Disulfide	ND	ND	5
1,1-Dichloroethene	ND	ND	5
1,1-Dichloroethane	ND	ND	5
trans-1,2-Dichloroethene	ND	ND	5
Chloroform	ND	ND	5
1,2-Dichloroethane	ND	ND	5
2-Butanone	ND	ND	10
1,1,1-Trichloroethane	ND	ND	5
Carbon Tetrachloride	ND	ND	5
Vinyl Acetate	ND	ND	10
Bromodichloromethane	ND	ND	5
1,2-Dichloropropane	ND	ND	5
trans-1,3-Dichloropropene	ND	ND	5
Trichloroethene	ND	ND	5
Dibromochloromethane	ND	ND	5
1,1,2-Trichloroethane	ND	ND	5
Benzene	ND	ND	5
cis-1,3-Dichloropropene	ND	ND	5
2-Chloroethylvinyl ether	ND	ND	10
Bromoform	ND	ND	5
4-Methyl-2-pentanone	ND	ND	10
2-Hexanone	ND	ND	10
Tetrachloroethene	ND	ND	5
1,1,2,2-Tetrachloroethane	ND	ND	5
Toluene	ND	ND	5
Chlorobenzene	ND	ND	5
Ethylbenzene	ND	ND	5
Styrene	ND	ND	5
Xylenes, Total	ND	ND	5

The Report Cover Letter is an integral part of this report.

This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the client to whom it is addressed. Any reproduction of this report or use of this Laboratory's name for advertising or publicity purposes without authorization is prohibited.

Enseco - CRL

7440 Lincoln Way • Garden Grove, CA 92641
 (714) 898-6370 • (213) 598-0458 • (800) LAB-1-CRL
 FAX: (714) 891-5917

Laboratory Report

ENSR
 19782 MacArthur Blvd., Suite 365
 Irvine, CA 92715
 ATTN: MS. MARY M. TRASK

Analysis No.: G-8915326-005
 Date Sampled: 2-JUN-1989
 Date Sample Rec'd: 2-JUN-1989
 Date Analyzed: 6-JUN-1989
 Sample Type: LIQUID

Project: (5500-002-102) POWERINE - SANTA FE SPRINGS
 Sample ID: MW-203

Purgeable Organics, EPA 624

Units: ug/L

Parameter	Result	Blank	Detection Limit
Chloromethane	ND	ND	10
Bromomethane	ND	ND	10
Vinyl Chloride	ND	ND	10
Chloroethane	ND	ND	10
Methylene Chloride	ND	ND	5
Acetone	ND	ND	10
Carbon Disulfide	ND	ND	5
1,1-Dichloroethene	ND	ND	5
1,1-Dichloroethane	ND	ND	5
trans-1,2-Dichloroethene	23.	ND	5
Chloroform	ND	ND	5
1,2-Dichloroethane	ND	ND	5
2-Butanone	ND	ND	10
1,1,1-Trichloroethane	ND	ND	5
Carbon Tetrachloride	ND	ND	5
Vinyl Acetate	ND	ND	10
Bromodichloromethane	ND	ND	5
1,2-Dichloropropane	ND	ND	5
trans-1,3-Dichloropropene	ND	ND	5
Trichloroethene	ND	ND	5
Dibromochloromethane	ND	ND	5
1,1,2-Trichloroethane	ND	ND	5
Benzene	110.	ND	5
cis-1,3-Dichloropropene	ND	ND	5
2-Chloroethylvinyl ether	ND	ND	10
Bromoform	ND	ND	5
4-Methyl-2-pentanone	ND	ND	10
2-Hexanone	ND	ND	10
Tetrachloroethene	ND	ND	5
1,1,2,2-Tetrachloroethane	ND	ND	5
Toluene	ND	ND	5
Chlorobenzene	ND	ND	5
Ethylbenzene	5.	ND	5
Styrene	ND	ND	5
Xylenes, Total	ND	ND	5

The Report Cover Letter is an integral part of this report.

This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the client to whom it is addressed. Any reproduction of this report or use of this Laboratory's name for advertising or publicity purposes without authorization is prohibited.

Enseco - CRL

7440 Lincoln Way • Garden Grove, CA 92641
 (714) 898-6370 • (213) 598-0458 • (800) LAB-1-CRL
 FAX: (714) 891-5917

Laboratory Report

ENSR
 19782 MacArthur Blvd., Suite 365
 Irvine, CA 92715
 ATTN: MS. MARY M. TRASK

Analysis No.: G-8915326-006
 Date Sampled: 2-JUN-1989
 Date Sample Rec'd: 2-JUN-1989
 Date Analyzed: 6-JUN-1989
 Sample Type: LIQUID

Project: (5500-002-102) POWERINE - SANTA FE SPRINGS
 Sample ID: MW-205

Purgeable Organics, EPA 624

Units: ug/L

Parameter	Result	Blank	Detection Limit
Chloromethane	ND	ND	10
Bromomethane	ND	ND	10
Vinyl Chloride	ND	ND	10
Chloroethane	ND	ND	10
Methylene Chloride	ND	ND	5
Acetone	ND	ND	10
Carbon Disulfide	ND	ND	5
1,1-Dichloroethene	ND	ND	5
1,1-Dichloroethane	ND	ND	5
trans-1,2-Dichloroethene	ND	ND	5
Chloroform	ND	ND	5
1,2-Dichloroethane	ND	ND	5
2-Butanone	ND	ND	10
1,1,1-Trichloroethane	ND	ND	5
Carbon Tetrachloride	ND	ND	5
Vinyl Acetate	ND	ND	10
Bromodichloromethane	ND	ND	5
1,2-Dichloropropane	ND	ND	5
trans-1,3-Dichloropropene	ND	ND	5
Trichloroethene	ND	ND	5
Dibromochloromethane	ND	ND	5
1,1,2-Trichloroethane	ND	ND	5
Benzene	120.	ND	5
cis-1,3-Dichloropropene	ND	ND	5
2-Chloroethylvinyl ether	ND	ND	10
Bromoform	ND	ND	5
4-Methyl-2-pentanone	ND	ND	10
2-Hexanone	ND	ND	10
Tetrachloroethene	ND	ND	5
1,1,2,2-Tetrachloroethane	ND	ND	5
Toluene	5.	ND	5
Chlorobenzene	ND	ND	5
Ethylbenzene	ND	ND	5
Styrene	ND	ND	5
Xylenes, Total	ND	ND	5

The Report Cover Letter is an integral part of this report.

This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the client to whom it is addressed. Any reproduction of this report or use of this Laboratory's name for advertising or publicity purposes without authorization is prohibited.

Enseco - CRL

7440 Lincoln Way • Garden Grove, CA 92641
(714) 898-6370 • (213) 598-0458 • (800) LAB-1-CRL
FAX: (714) 891-5917

Laboratory Report

ENSR
19782 MacArthur Blvd., Suite 365
Irvine, CA 92715
ATTN: MS. MARY M. TRASK

Analysis No.: G-8915326-001/006
Date Sampled: 1-JUN-1989
2-JUN-1989
Date Sample Rec'd: 2-JUN-1989
Sample Type: LIQUID

Project: (5500-002-102) POWERINE - SANTA FE SPRINGS

QA/QC Summary

Date	Parameter (Method)	Average Spike Recovery	Acceptable Range	Relative Percent Difference	Acceptable Range
9-JUN-1989	1,1-DICHLOROETHENE (EPA 601)	115	60-120	9.	40
9-JUN-1989	TRICHLOROETHENE (EPA 601)	100	60-120	10.	40
9-JUN-1989	CHLOROBENZENE (EPA 601)	75	60-120	13.	40
7-JUN-1989	1,1-DICHLOROETHENE (EPA 624)	91	58-118	9.	12
7-JUN-1989	TRICHLOROETHENE (EPA 624)	96	69-121	9.	16
7-JUN-1989	BENZENE (EPA 624)	98	63-120	9.	12
7-JUN-1989	TOLUENE (EPA 624)	98	68-121	9.	16
7-JUN-1989	CHLOROBENZENE (EPA 624)	105	66-123	10.	13

The Report Cover Letter is an integral part of this report.

This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the client to whom it is addressed. Any reproduction of this report or use of this Laboratory's name for advertising or publicity purposes without authorization is prohibited.

JUN 19 1989

Enseco - CRL

7440 Lincoln Way • Garden Grove, CA 92641
(714) 898-6370 • (213) 598-0458 • (800) LAB-1-CRL
FAX: (714) 891-5917

June 15, 1989

ENSR
19782 MacArthur Blvd., Ste 365
Irvine, CA 92715
ATTN: Mr. John Nordenstam

Analysis No: G-8915622-001/004
Date Sampled: 5-JUN-1989
Date Sample Rec'd: 5-JUN-1989
Project: Powerine/5500-002-102

Enclosed with this letter is the report on the chemical and physical analyses on the samples from ANALYSIS NO: G-8915622-001/004 shown above.

The samples were received by CRL, in a chilled state, intact and with a chain-of-custody record attached.

Please note that ND() means not detected at the detection limit expressed within the parentheses.



REVIEWED



APPROVED

The Report Cover Letter is an integral part of this report.

This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the client to whom it is addressed. Any reproduction of this report or use of this Laboratory's name for advertising or publicity purposes without authorization is prohibited.

Enseco - CRL

7440 Lincoln Way • Garden Grove, CA 92641
(714) 898-6370 • (213) 598-0458 • (800) LAB-1-CRL
FAX: (714) 891-5917

Laboratory Report

ENSR
19782 MacArthur Blvd., Suite 365
Irvine, CA 92715
ATTN: MR. JOHN NORDENSTAM

Analysis No.: G-8915622-001
Date Sampled: 5-JUN-1989
Date Sample Rec'd: 5-JUN-1989
Date Analyzed: 10-JUN-1989
Sample Type: LIQUID

Project: (5500-002-102) POWERINE
Sample ID: MW-201

Halogenated Volatile Organics, EPA 601

Units: ug/L

Parameter	Result	Blank	Detection Limit
Chloromethane	ND	ND	20
Bromomethane	ND	ND	20
Vinyl Chloride	ND	ND	20
Chloroethane	ND	ND	20
Methylene Chloride	ND	ND	20
Trichlorofluoromethane	ND	ND	20
1,1-Dichloroethene	ND	ND	20
1,1-Dichloroethane	ND	ND	20
trans-1,2-Dichloroethene	ND	ND	20
Chloroform	ND	ND	20
1,2-Dichloroethane	ND	ND	20
1,1,1-Trichloroethane	ND	ND	20
Carbon Tetrachloride	ND	ND	20
Bromodichloromethane	ND	ND	20
1,2-Dichloropropane	ND	ND	20
cis-1,3-Dichloropropene	ND	ND	20
Trichloroethene	ND	ND	20
Dibromochloromethane	ND	ND	20
1,1,2-Trichloroethane	ND	ND	20
trans-1,3-Dichloropropene	ND	ND	20
2-Chloroethylvinyl ether	ND	ND	20
Bromoform	ND	ND	20
Tetrachloroethene	ND	ND	20
1,1,2,2-Tetrachloroethane	ND	ND	20
Chlorobenzene	ND	ND	20
1,3-Dichlorobenzene	ND	ND	20
1,2-Dichlorobenzene	ND	ND	20
1,4-Dichlorobenzene	ND	ND	20

NOTE: Higher detection limits due to sample matrix.

The Report Cover Letter is an integral part of this report.

This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the client to whom it is addressed. Any reproduction of this report or use of this Laboratory's name for advertising or publicity purposes without authorization is prohibited.

Enseco - CRL

7440 Lincoln Way • Garden Grove, CA 92641
 (714) 898-6370 • (213) 598-0458 • (800) LAB-1-CRL
 FAX: (714) 891-5917

Laboratory Report

ENSR
 19782 MacArthur Blvd., Suite 365
 Irvine, CA 92715
 ATTN: MR. JOHN NORDENSTAM

Analysis No.: G-8915622-002
 Date Sampled: 5-JUN-1989
 Date Sample Rec'd: 5-JUN-1989
 Date Analyzed: 10-JUN-1989
 Sample Type: LIQUID

Project: (5500-002-102) POWERINE
 Sample ID: MW-503

Halogenated Volatile Organics, EPA 601

Units: ug/L

Parameter	Result	Blank	Detection Limit
Chloromethane	ND	ND	100.
Bromomethane	ND	ND	100.
Vinyl Chloride	ND	ND	100.
Chloroethane	ND	ND	100.
Methylene Chloride	ND	ND	100.
Trichlorofluoromethane	ND	ND	100.
1,1-Dichloroethene	ND	ND	100.
1,1-Dichloroethane	ND	ND	100.
trans-1,2-Dichloroethene	ND	ND	100.
Chloroform	ND	ND	100.
1,2-Dichloroethane	ND	ND	100.
1,1,1-Trichloroethane	ND	ND	100.
Carbon Tetrachloride	ND	ND	100.
Bromodichloromethane	ND	ND	100.
1,2-Dichloropropane	ND	ND	100.
cis-1,3-Dichloropropene	ND	ND	100.
Trichloroethene	ND	ND	100.
Dibromochloromethane	ND	ND	100.
1,1,2-Trichloroethane	ND	ND	100.
trans-1,3-Dichloropropene	ND	ND	100.
2-Chloroethylvinyl ether	ND	ND	100.
Bromoform	ND	ND	100.
Tetrachloroethene	ND	ND	100.
1,1,2,2-Tetrachloroethane	ND	ND	100.
Chlorobenzene	ND	ND	100.
1,3-Dichlorobenzene	ND	ND	100.
1,2-Dichlorobenzene	ND	ND	100.
1,4-Dichlorobenzene	ND	ND	100.

NOTE: Higher detection limits due to sample matrix.

The Report Cover Letter is an integral part of this report.

This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the client to whom it is addressed. Any reproduction of this report or use of this Laboratory's name for advertising or publicity purposes without authorization is prohibited.

Enseco - CRL

7440 Lincoln Way • Garden Grove, CA 92641
(714) 898-6370 • (213) 598-0458 • (800) LAB-1-CRL
FAX: (714) 891-5917

Laboratory Report

ENSR
19782 MacArthur Blvd., Suite 365
Irvine, CA 92715
ATTN: MR. JOHN NORDENSTAM

Analysis No.: G-8915622-003
Date Sampled: 5-JUN-1989
Date Sample Rec'd: 5-JUN-1989
Date Analyzed: 10-JUN-1989
Sample Type: LIQUID

Project: (5500-002-102) POWERINE
Sample ID: MW-206

Halogenated Volatile Organics, EPA 601

Units: ug/L

Parameter	Result	Blank	Detection Limit
Chloromethane	ND	ND	100
Bromomethane	ND	ND	100
Vinyl Chloride	ND	ND	100
Chloroethane	ND	ND	100
Methylene Chloride	ND	ND	100
Trichlorofluoromethane	ND	ND	100
1,1-Dichloroethene	ND	ND	100
1,1-Dichloroethane	ND	ND	100
trans-1,2-Dichloroethene	ND	ND	100
Chloroform	ND	ND	100
1,2-Dichloroethane	ND	ND	100
1,1,1-Trichloroethane	ND	ND	100
Carbon Tetrachloride	ND	ND	100
Bromodichloromethane	ND	ND	100
1,2-Dichloropropane	ND	ND	100
cis-1,3-Dichloropropene	ND	ND	100
Trichloroethene	ND	ND	100
Dibromochloromethane	ND	ND	100
1,1,2-Trichloroethane	ND	ND	100
trans-1,3-Dichloropropene	ND	ND	100
2-Chloroethylvinyl ether	ND	ND	100
Bromoform	ND	ND	100
Tetrachloroethene	ND	ND	100
1,1,2,2-Tetrachloroethane	ND	ND	100
Chlorobenzene	ND	ND	100
1,3-Dichlorobenzene	ND	ND	100
1,2-Dichlorobenzene	ND	ND	100
1,4-Dichlorobenzene	ND	ND	100

NOTE: Higher detection limits due to sample matrix.

The Report Cover Letter is an integral part of this report.

This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the client to whom it is addressed. Any reproduction of this report or use of this Laboratory's name for advertising or publicity purposes without authorization is prohibited.

Enseco - CRL

7440 Lincoln Way • Garden Grove, CA 92641
(714) 898-6370 • (213) 598-0458 • (800) LAB-1-CRL
FAX: (714) 891-5917

Laboratory Report

ENSR
19782 MacArthur Blvd., Suite 365
Irvine, CA 92715
ATTN: MR. JOHN NORDENSTAM

Analysis No.: G-8915622-004
Date Sampled: 5-JUN-1989
Date Sample Rec'd: 5-JUN-1989
Date Analyzed: 10-JUN-1989
Sample Type: LIQUID

Project: (5500-002-102) POWERINE
Sample ID: MW-002

Halogenated Volatile Organics, EPA 601

Units: ug/L

Parameter	Result	Blank	Detection Limit
Chloromethane	ND	ND	1
Bromomethane	ND	ND	1
Vinyl Chloride	ND	ND	1
Chloroethane	ND	ND	1
Methylene Chloride	ND	ND	1
Trichlorofluoromethane	ND	ND	1
1,1-Dichloroethene	ND	ND	1
1,1-Dichloroethane	ND	ND	1
trans-1,2-Dichloroethene	ND	ND	1
Chloroform	ND	ND	1
1,2-Dichloroethane	ND	ND	1
1,1,1-Trichloroethane	ND	ND	1
Carbon Tetrachloride	ND	ND	1
Bromodichloromethane	ND	ND	1
1,2-Dichloropropane	ND	ND	1
cis-1,3-Dichloropropene	ND	ND	1
Trichloroethene	ND	ND	1
Dibromochloromethane	ND	ND	1
1,1,2-Trichloroethane	ND	ND	1
trans-1,3-Dichloropropene	ND	ND	1
2-Chloroethylvinyl ether	ND	ND	1
Bromoform	ND	ND	1
Tetrachloroethene	ND	ND	1
1,1,2,2-Tetrachloroethane	ND	ND	1
Chlorobenzene	ND	ND	1
1,3-Dichlorobenzene	ND	ND	1
1,2-Dichlorobenzene	ND	ND	1
1,4-Dichlorobenzene	ND	ND	1

The Report Cover Letter is an integral part of this report.

This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the client to whom it is addressed. Any reproduction of this report or use of this Laboratory's name for advertising or publicity purposes without authorization is prohibited.

Enseco - CRL

7440 Lincoln Way • Garden Grove, CA 92641
(714) 898-6370 • (213) 598-0458 • (800) LAB-1-CRL
FAX: (714) 891-5917

Laboratory Report

ENSR
19782 MacArthur Blvd., Suite 365
Irvine, CA 92715
ATTN: MR. JOHN NORDENSTAM

Analysis No.: G-8915622-001
Date Sampled: 5-JUN-1989
Date Sample Rec'd: 5-JUN-1989
Date Analyzed: 7-JUN-1989
Sample Type: LIQUID

Project: (5500-002-102) POWERINE
Sample ID: MW-201

Purgeable Organics, EPA 624

Units: ug/L

Parameter	Result	Blank	Detection Limit
Chloromethane	ND	ND	100
Bromomethane	ND	ND	100
Vinyl Chloride	ND	ND	100
Chloroethane	ND	ND	100
Methylene Chloride	ND	ND	50
Acetone	ND	ND	100
Carbon Disulfide	ND	ND	50
1,1-Dichloroethene	ND	ND	50
1,1-Dichloroethane	ND	ND	50
trans-1,2-Dichloroethene	ND	ND	50
Chloroform	ND	ND	50
1,2-Dichloroethane	ND	ND	50
2-Butanone	ND	ND	100
1,1,1-Trichloroethane	ND	ND	50
Carbon Tetrachloride	ND	ND	50
Vinyl Acetate	ND	ND	100
Bromodichloromethane	ND	ND	50
1,2-Dichloropropane	ND	ND	50
trans-1,3-Dichloropropene	ND	ND	50
Trichloroethene	ND	ND	50
Dibromochloromethane	ND	ND	50
1,1,2-Trichloroethane	ND	ND	50
Benzene	350.	ND	50
cis-1,3-Dichloropropene	ND	ND	50
2-Chloroethylvinyl ether	ND	ND	100
Bromoform	ND	ND	50
4-Methyl-2-pentanone	ND	ND	100
2-Hexanone	ND	ND	100
Tetrachloroethene	ND	ND	50
1,1,2,2-Tetrachloroethane	ND	ND	50
Toluene	ND	ND	50
Chlorobenzene	ND	ND	50
Ethylbenzene	ND	ND	50
Styrene	ND	ND	50
Xylenes, Total	50.	ND	50

The Report Cover Letter is an integral part of this report.

This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the client to whom it is addressed. Any reproduction of this report or use of this Laboratory's name for advertising or publicity purposes without authorization is prohibited.

Enseco - CRL

7440 Lincoln Way • Garden Grove, CA 92641
(714) 898-6370 • (213) 598-0458 • (800) LAB-1-CRL
FAX: (714) 891-5917

Laboratory Report

ENSR
19782 MacArthur Blvd., Suite 365
Irvine, CA 92715
ATTN: MR. JOHN NORDENSTAM

Analysis No.: G-8915622-002
Date Sampled: 5-JUN-1989
Date Sample Rec'd: 5-JUN-1989
Date Analyzed: 7-JUN-1989
Sample Type: LIQUID

Project: (5500-002-102) POWERINE
Sample ID: MW-503

Purgeable Organics, EPA 624

Units: ug/L

Parameter	Result	Blank	Detection Limit
Chloromethane	ND	ND	100
Bromomethane	ND	ND	100
Vinyl Chloride	ND	ND	100
Chloroethane	ND	ND	100
Methylene Chloride	ND	ND	50
Acetone	ND	ND	100
Carbon Disulfide	ND	ND	50
1,1-Dichloroethene	ND	ND	50
1,1-Dichloroethane	ND	ND	50
trans-1,2-Dichloroethene	ND	ND	50
Chloroform	ND	ND	50
1,2-Dichloroethane	ND	ND	50
2-Butanone	ND	ND	100
1,1,1-Trichloroethane	ND	ND	50
Carbon Tetrachloride	ND	ND	50
Vinyl Acetate	ND	ND	100
Bromodichloromethane	ND	ND	50
1,2-Dichloropropane	ND	ND	50
trans-1,3-Dichloropropene	ND	ND	50
Trichloroethene	ND	ND	50
Dibromochloromethane	ND	ND	50
1,1,2-Trichloroethane	ND	ND	50
Benzene	600.	ND	50
cis-1,3-Dichloropropene	ND	ND	50
2-Chloroethylvinyl ether	710.	ND	100
Bromoform	ND	ND	50
4-Methyl-2-pentanone	ND	ND	100
2-Hexanone	ND	ND	100
Tetrachloroethene	ND	ND	50
1,1,2,2-Tetrachloroethane	ND	ND	50
Toluene	340.	ND	50
Chlorobenzene	ND	ND	50
Ethylbenzene	630.	ND	50
Styrene	ND	ND	50
Xylenes, Total	1,200.	ND	50

The Report Cover Letter is an integral part of this report.

This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the client to whom it is addressed. Any reproduction of this report or use of this Laboratory's name for advertising or publicity purposes without authorization is prohibited.

Enseco - CRL

7440 Lincoln Way • Garden Grove, CA 92641
(714) 898-6370 • (213) 598-0458 • (800) LAB-1-CRL
FAX: (714) 891-5917

Laboratory Report

ENSR
19782 MacArthur Blvd., Suite 365
Irvine, CA 92715
ATTN: MR. JOHN NORDENSTAM

Analysis No.: G-8915622-003
Date Sampled: 5-JUN-1989
Date Sample Rec'd: 5-JUN-1989
Date Analyzed: 7-JUN-1989
Sample Type: LIQUID

Project: (5500-002-102) POWERINE
Sample ID: MW-206

Purgeable Organics, EPA 624

Units: ug/L

Parameter	Result	Blank	Detection Limit
Chloromethane	ND	ND	250
Bromomethane	ND	ND	250
Vinyl Chloride	ND	ND	250
Chloroethane	ND	ND	250
Methylene Chloride	ND	ND	120
Acetone	820.	ND	250
Carbon Disulfide	ND	ND	120
1,1-Dichloroethene	ND	ND	120
1,1-Dichloroethane	ND	ND	120
trans-1,2-Dichloroethene	ND	ND	120
Chloroform	ND	ND	120
1,2-Dichloroethane	ND	ND	120
2-Butanone	ND	ND	250
1,1,1-Trichloroethane	ND	ND	120
Carbon Tetrachloride	ND	ND	120
Vinyl Acetate	ND	ND	250
Bromodichloromethane	ND	ND	120
1,2-Dichloropropane	ND	ND	120
trans-1,3-Dichloropropene	ND	ND	120
Trichloroethene	ND	ND	120
Dibromochloromethane	ND	ND	120
1,1,2-Trichloroethane	ND	ND	120
Benzene	3,100.	ND	120
cis-1,3-Dichloropropene	ND	ND	120
2-Chloroethylvinyl ether	ND	ND	250
Bromoform	ND	ND	120
4-Methyl-2-pentanone	ND	ND	250
2-Hexanone	ND	ND	250
Tetrachloroethene	ND	ND	120
1,1,2,2-Tetrachloroethane	ND	ND	120
Toluene	1,200.	ND	120
Chlorobenzene	ND	ND	120
Ethylbenzene	2,300.	ND	120
Styrene	ND	ND	120
Xylenes, Total	8,600.	ND	120

The Report Cover Letter is an integral part of this report.

This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the client to whom it is addressed. Any reproduction of this report or use of this Laboratory's name for advertising or publicity purposes without authorization is prohibited.

Enseco - CRL

7440 Lincoln Way • Garden Grove, CA 92641
(714) 898-6370 • (213) 598-0458 • (800) LAB-1-CRL
FAX: (714) 891-5917

Laboratory Report

ENSR
19782 MacArthur Blvd., Suite 365
Irvine, CA 92715
ATTN: MR. JOHN NORDENSTAM

Analysis No.: G-8915622-004
Date Sampled: 5-JUN-1989
Date Sample Rec'd: 5-JUN-1989
Date Analyzed: 7-JUN-1989
Sample Type: LIQUID

Project: (5500-002-102) POWERINE
Sample ID: MW-002

Purgeable Organics, EPA 624

Units: ug/L

Parameter	Result	Blank	Detection Limit
Chloromethane	ND	ND	10
Bromomethane	ND	ND	10
Vinyl Chloride	ND	ND	10
Chloroethane	ND	ND	10
Methylene Chloride	ND	ND	5
Acetone	ND	ND	10
Carbon Disulfide	ND	ND	5
1,1-Dichloroethene	ND	ND	5
1,1-Dichloroethane	ND	ND	5
trans-1,2-Dichloroethene	ND	ND	5
Chloroform	ND	ND	5
1,2-Dichloroethane	ND	ND	5
2-Butanone	ND	ND	10
1,1,1-Trichloroethane	ND	ND	5
Carbon Tetrachloride	ND	ND	5
Vinyl Acetate	ND	ND	10
Bromodichloromethane	ND	ND	5
1,2-Dichloropropane	ND	ND	5
trans-1,3-Dichloropropene	ND	ND	5
Trichloroethene	ND	ND	5
Dibromochloromethane	ND	ND	5
1,1,2-Trichloroethane	ND	ND	5
Benzene	ND	ND	5
cis-1,3-Dichloropropene	ND	ND	5
2-Chloroethylvinyl ether	ND	ND	10
Bromoform	ND	ND	5
4-Methyl-2-pentanone	ND	ND	10
2-Hexanone	ND	ND	10
Tetrachloroethene	ND	ND	5
1,1,2,2-Tetrachloroethane	ND	ND	5
Toluene	ND	ND	5
Chlorobenzene	ND	ND	5
Ethylbenzene	ND	ND	5
Styrene	ND	ND	5
Xylenes, Total	ND	ND	5

The Report Cover Letter is an integral part of this report.

This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the client to whom it is addressed. Any reproduction of this report or use of this Laboratory's name for advertising or publicity purposes without authorization is prohibited.

Enseco - CRL

7440 Lincoln Way • Garden Grove, CA 92641
 (714) 898-6370 • (213) 598-0458 • (800) LAB-1-CRL
 FAX: (714) 891-5917

Laboratory Report

ENSR
 19782 MacArthur Blvd., Suite 365
 Irvine, CA 92715
 ATTN: MR. JOHN NORDENSTAM
 Project: (5500-002-102) POWERINE

Analysis No.: G-8915622-001/004
 Date Sampled: 5-JUN-1989
 Date Sample Rec'd: 5-JUN-1989
 Sample Type: LIQUID

QA/QC Summary

Date	Parameter (Method)	Average Spike Recovery	Acceptable Range	Relative Percent Difference	Acceptable Range
9-JUN-1989	1,1-DICHLOROETHENE (EPA 601)	115	60-120	9.	40
9-JUN-1989	TRICHLOROETHENE (EPA 601)	100	60-120	10.	40
9-JUN-1989	CHLOROBENZENE (EPA 601)	75	60-120	13.	40
7-JUN-1989	1,1-DICHLOROETHENE (EPA 624)	91	58-118	9.	12
7-JUN-1989	TRICHLOROETHENE (EPA 624)	96	69-121	9.	16
7-JUN-1989	BENZENE (EPA 624)	98	63-120	9.	12
7-JUN-1989	TOLUENE (EPA 624)	98	68-121	9.	16
7-JUN-1989	CHLOROBENZENE (EPA 624)	105	66-123	10.	13

The Report Cover Letter is an integral part of this report.

This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the client to whom it is addressed. Any reproduction of this report or use of this Laboratory's name for advertising or publicity purposes without authorization is prohibited.